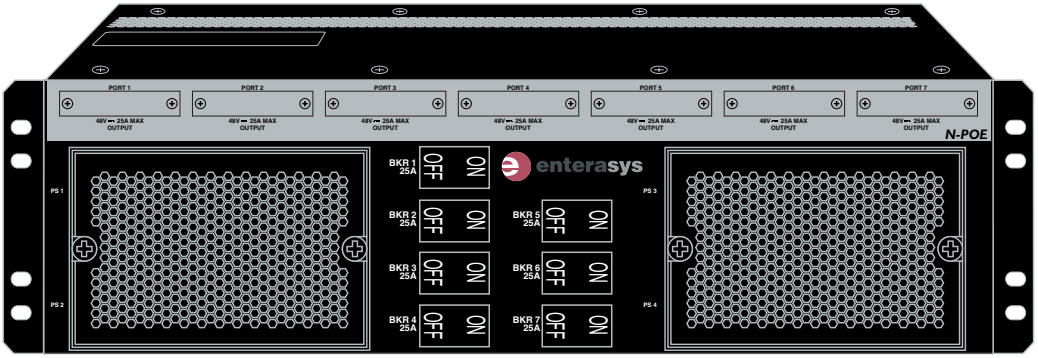
Matrix N Series
N-POE Power System
Installation Guide



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Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

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Application of Council Directive(s):	**89/336/EEC** **73/23/EEC**
Manufacturer's Name:	**Enterasys Networks, Inc.**
Manufacturer's Address:	**50 Minuteman Road** **Andover, MA 01810** **USA**
European Representative Address:	**Enterasys Networks, Ltd.** **Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG14 2PZ, England**
Conformance to Directive(s)/Product Standards:	**EC Directive 89/336/EEC** **EN 55022** **EN 61000-3-2** **EN 61000-3-3** **EN 55024** **EC Directive 73/23/EEC** **EN 60950**
Equipment Type/Environment:	**Networking Equipment, for use in a Commercial or Light Industrial Environment.**

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About this Guide

This guide provides an overview, installation and troubleshooting instructions, and specifications for the Enterasys Matrix N-POE power system, which can provide up to seven 48 Vdc power sources to DFE series PoE-compliant switch modules in an N3 or N7 network system chassis.

Using This Guide

Read through this guide completely to familiarize yourself with its contents and gain an understanding of the features and capabilities of the N-POE power system (NPS) components. A general working knowledge of data communications networks is helpful when setting up an NPS.

Who Should Use This Guide

This guide is intended for a network administrator responsible for installing and setting up the switch.

Electrical Hazard: Only qualified personnel should install or service this unit.

Riesgo Eléctrico: Nada mas personal capacitado debe de instalar o darle servicio a esta unida.

Elektrischer Gefahrenhinweis: Installationen oder Servicearbeiten sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

How to Use This Guide

For...	Refer to...
An overview of the features and capabilities of the NPS, introduction to powered devices (PDs) and Power Classification, and power system deployment. This chapter also provides instructions for obtaining help from Enterasys Networks, if needed.	Chapter 1, **Introduction**
Instructions to install an NPS into a standard 19-inch rack. This includes installing the N-POE Chassis, one to four N-POE PSMs, interconnecting DFE-POE-CBL-2M 48 Vdc Cables, and AC power cords. Troubleshooting is also covered in this chapter.	Chapter 2, **Installation**
Specifications, environmental requirements, and physical properties of the N-POE Chassis, N-POE PSM, N-POE-1200W power supply, DFE-POE-CBL-2M 48 Vdc Cable, 48 Vdc Port D-sub pin-out description, and Compliance Standards.	Appendix A, **Specifications**

Using the Matrix N Series Manual Set

The Matrix N-POE Series of switches support PoE-compliant 48 Vdc/data connections through the same cable, to remote powered devices (PDs) such as telephones, fax machines and other devices that meet PoE standards. The N-POE Series switch manuals explain how to install the switch, connect the 48 Vdc/data cables to the external powered devices (PDs), and configure the switch using command line interface commands described in the *Matrix DFE Series Configuraton Guide*.

Each manual is written for qualified personnel who are responsible for installing the switch device and also have a general working knowledge of data communication networks and their physical layer components.

The manuals can be accessed on the World Wide Web, using the following URL:

Documentation URL: http://www.enterasys.com/support/manuals

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Note: Calls the reader's attention to any item of information that may be of special importance.

Caution: Contains information essential to avoid damage to the equipment.

Precaución: Contiene información esencial para prevenir dañar el equipo.

Achtung: Verweißt auf wichtige Informationen zum Schutz gegen Beschädigungen.

Electrical Hazard: Warns against an action that could result in personal injury or death due to an electrical hazard.

Riesgo Electrico: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte debido a un riesgo eléctrico.

Elektrischer Gefahrenhinweis: Warnung vor sämtlichen Handlungen, die zu Verletzung von Personen oder Todesfällen – hervorgerufen durch elektrische Spannung – führen können!

Warning: Warns against an action that could result in personal injury or death.

Advertencia: Advierte contra una acción que pudiera resultar en lesión corporal o la muerte.

Warnhinweis: Warnung vor Handlungen, die zu Verletzung von Personen oder gar Todesfällen führen können!

1

Introduction

This chapter provides a functional overview of the N-POE system, which includes the following:

Note: In this document, the following terms are used:

- *NPS* refers to the complete N-POE power system.
- *N-POE Chassis* refers to the N-POE Chassis only.
- *N-POE PSM* refers to the N-POE-1200 W DC power supply module.
- *PoE* refers to the Power over Ethernet (802.3af) compliance standard.
- *PoE switch module* refers to a DFE Series PoE-compliant switch module.
- *PD* refers to powered devices, which can operate using 48 Vdc received through new or existing Ethernet data cable.

N-POE Power System (NPS) Overview

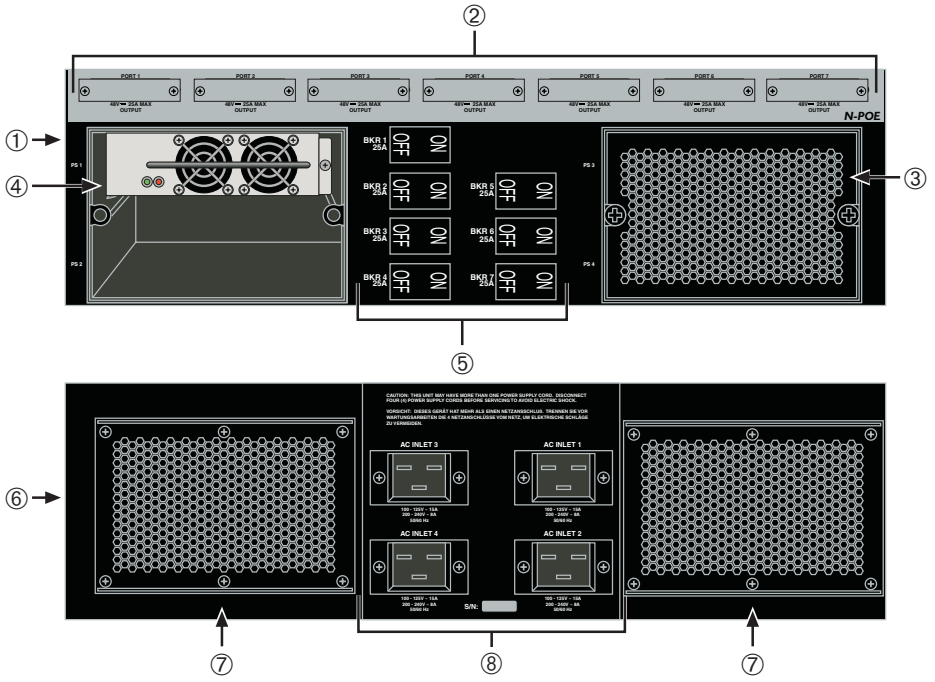
The N-POE Chassis can house up to four N-POE PSMs to provide an N-POE Power System to meet your needs and can consist of the following components:

- One N-POE Chassis
- One to four optional N-POE PSMs. Each are shipped with their own AC power cord.
- One to seven optional DFE-POE-CBL-2M Cables

The NPS enables you to expand the capability of the Matrix N3 and Matrix N7 chassis to operate Enterasys PoE switch modules, which support connections to powered devices (PDs). This is accomplished by providing the 48 Vdc necessary for the PoE switch modules to support 48 Vdc/data connections to powered devices (PDs).

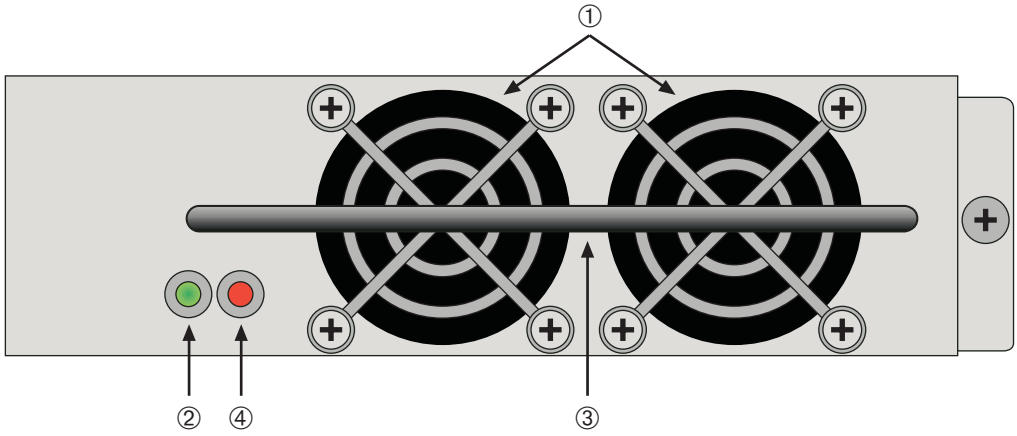
The N-POE Chassis and N-POE PSM are shown in Figure 1-1 and Figure 1-2, respectively.

Figure 1-1 Matrix N-POE Chassis (front and rear view)



1 N-POE Chassis (front view)
2 Seven D-Sub 48 Vdc output ports (Ports 1–7)
3 Power supply bay cover
4 Power supply bay PS1(shown with an optional N-POE PSM installed)
5 25 A circuit breakers for each N-POE PSM
6 N-POE Chassis (rear view)
7 Air discharge vents (2)
8 Four AC power input connectors

Figure 1-2 N-POE PSM Front Panel



1	Intake cooling fan	**3**	Handle
2	Green DC power LED (DC within specification)	**4**	Red AC power LED (AC out of specification)

N-POE Chassis

The N-POE Chassis features include the following:

- Supports up to four N-POE PSMs in an N+1 configuration (if two or more N-POE PSMs are installed and one fails, power is provided by the remaining N-POE PSMs).
- Easy front panel access to seven D-Sub 48 Vdc, 25 A connectors that can provide power for up to seven PoE switch modules residing in an N3 or N7 chassis.
- Easy access to circuit breaker/reset switch for each 48 Vdc, 25 A output.
- Separate AC power inlet connectors for each N-POE PSM installed.
- Installs in a standard 19-inch rack to provide maximum wiring closet port density.

Optional N-POE Power Supply Module (N-POE PSM)

The N-POE PSM features include the following:

- Hot swappable capability as long as the total power needed does not exceed the power output capability of the remaining N-POE PSMs in the N-POE Chassis.
- Provides a maximum power output of 1200 W to PoE switch modules. The maximum number of PDs supported by each PoE switch module is dependent on the PD power consumption as indicated by their Power Classifications. For details about Power Classification, refer to “Powered Devices (PDs)” on page 1-4.

- Provides power redundancy when two N-POE PSMs are installed in the N-POE Chassis and there is no more than a 1200-Watt demand by the connected DFE series switch module to support PDs. So if one N-POE PSM fails or is removed from the chassis, the other N-POE PSM can support the total load.
- Provides continuous power sharing by all N-POE PSMs when two or more are installed in the N-POE Chassis. Up to four N-POE PSMs can be installed in the N-POE Chassis to provide up to 4800 Watts of power.

N-POE PSM Status LEDs

There are two status LEDs (AC power LED and DC power LED) on each N-POE PSM. The AC power LED is green when the N-POE PSM AC power input is within specifications and turns off when it is not. The DC power LED is green when the N-POE PSM 48 Vdc output is within specifications and turns off when it is not.

Powered Devices (PDs)

PDs are devices that receive their operating 48 Vdc power through a new or existing Ethernet cable from a switch or other device that can provide a PoE-compliant port connection. This enables the PD to operate in a location without local power. For example:

- Devices such as PoE-compliant remote EXIT signs and Personal Data Assistants (PDAs),
- Devices that support Voice over IP such as PoE-compliant digital telephones,
- Devices that support Wireless Application Protocol (WAP) such as security cameras, laptop PCs, and many more devices.

Each device is rated according to a PoE Power Classification assigned by the manufacturer. If you know the classification of the PDs connected to your system, you can approximate the total amount of power needed to operate the PDs and plan accordingly.

Power Classifications and Deployment

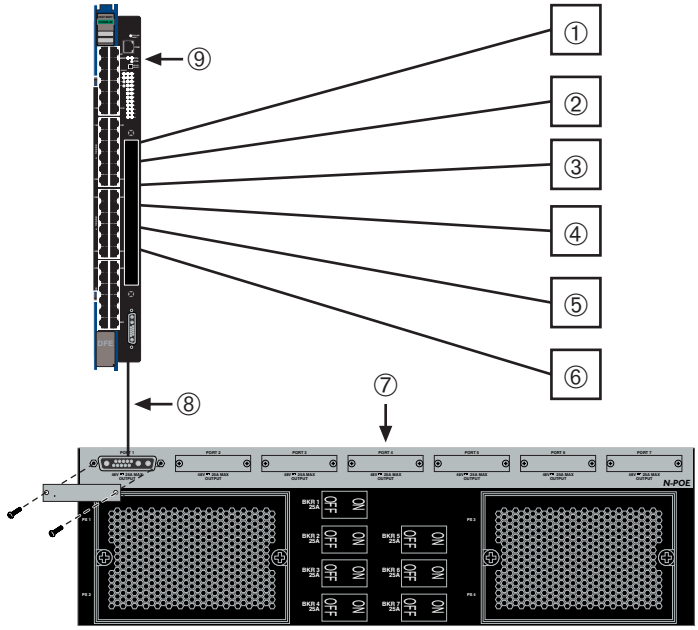
The number of N-POE PSMs needed to power the PoE-compliant PDs is dependent on their Power Classifications. Each N-POE PSM can supply up to 1200 Watts of power. You can determine the number of power supplies needed by referring to Table 1-1 and adding up the maximum power requirement according to the Power Classification rating (1 through 3) of each PD. Keep in mind that each classification represents a range of power, so your maximum calculation represents a worst-case power consumption, so the actual power consumption could be less.

Table 1-1 DTE PoE Power Classifications

Class	Usage	DTE Maximum Power Range Usage
0	Default	0.44 to 12.95 Watts
1	Optional	0.44 to 3.84 Watts
2	Optional	3.84 to 6.49 Watts
3	Optional	6.49 to 12.95 Watts
4	Not Allowed	Reserved for Future Use

Figure 1-3 shows an example of a simple configuration with one 48 Vdc output port from an N-POE Chassis connected to a PoE switch module (such as Enterasys Networks' 7H4385-49). The N-POE Chassis connection provides 48 Vdc and its power supply status information (indicates if the power supply is okay) to the PoE switch module.

Figure 1-3 Example of a Simple N-POE Power Configuration



1 DTE, non-PoE compliant
2 PD, no Class rating
3 PD, Class 2
4 PD, Class 2
5 PD, Class 3
6 PD, Class 4
7 NPS
8 48 Vdc/Status cable (DFE-POE-CBL-2M)
9 PoE-compliant switch module

The PoE switch module manages the 48 Vdc output to the six PDs. In this example, six of the PoE module 48 Vdc/data ports are to PDs with the following Class ratings:

- One does not support PoE (no power)
- One has no Class rating (Defaults to Class 0, 12.95 Watts maximum)
- Two are Class 2 (6.49 Watts maximum x 2 = 12.98 Watts total)
- One is Class 3 (12.95 Watts maximum)
- One is Class 4 (defaults to 12.95 Watts maximum)

The maximum power needed from the N-POE Chassis is 51.83 Watts. In this example, only one N-POE PSM would be needed in the N-POE Chassis. However, as an option a second N-POE PSM can be installed for redundancy. As long as N-POE PSMs are sharing a load of under 1200 Watts, one N-POE PSM can handle the load if the other fails or is removed from the N-POE Chassis.

Getting Help

For additional support related to the devices or this document, contact Enterasys Networks using one of the following methods:

World Wide Web	http://www.enterasys.com/support
Phone	603-332-9400 1-800-872-8440 (toll-free in U.S. and Canada) For the Enterasys Networks Support toll-free number in your country: http://www.enterasys.com/support/gtac-all.html
Internet mail	support@enterasys.com To expedite your message, please type **[switching]** in the subject line.
To send comments or suggestions concerning this document to the Technical Writing Department: techwriting@enterasys.com To expedite your message, please include the document Part Number in the email message.	

Before contacting Enterasys Networks for technical support, have the following information ready:

- Your Enterasys Networks service contract number
- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Enterasys Networks products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

2

Installation

Electrical Hazard: Only qualified personnel should perform installation procedures.

Riesgo Electrico: Solamente personal calificado debe realizar procedimientos de instalacion.

Elektrischer Gefahrenhinweis: Installationen sollten nur durch ausgebildetes und qualifiziertes Personal vorgenommen werden.

This chapter provides the installation instructions to install all the components of an NPS.

To correctly install an NPS, follow the order of information listed below.

Required Tools

A Phillips screwdriver is required to install the N-POE Chassis and Allen wrench for the N-POE PSMs.

Unpacking Chassis and Power Supply Module(s)

To unpack the N-POE Chassis or an N-POE PSM, proceed as follows:

1. Open the box and remove the packing material protecting the devices.
2. Verify the contents of each carton and compare the contents shipped with those listed in Table 2-1 and Table 2-2.
3. Perform a visual inspection of the devices for any signs of physical damage. Contact Enterasys Networks if there are any signs of damage. Refer to "Getting Help" on page 1-7 for details.

Table 2-1 Contents of N-POE Chassis Carton

Item	Quantity
N-POE Chassis	1
Manual Accessory Kit	1
Reusable ESD Wrist Strap	1

Table 2-2 Contents of an Optional N-POE PSM Carton

Item	Quantity
N-POE-1200 W DC Power Supply Module	1
USA, NEMA Power Cord 5-20, C19, R/A, SHLD[1]	1
Notice Card	1

1. If a power cord needs to be replaced, it must meet the requirements specified in "AC Power Cord" on page A-5.

Note: The DFE-POE-CBL-2M Cable power cables used to make connections from the N-POE Chassis to the N-PoE switch modules must be ordered separately.

Installing N-POE PSMs

Before installing the N-POE Chassis in a rack, refer back to "Powered Devices (PDs)" on page 1-4 to determine how many N-POE PSMs will be needed in the N-POE Chassis. One box with an N-POE PSM is shipped separately from the N-POE Chassis. Additional N-POE PSMs are ordered separately.

Caution: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

Precaución: Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

The N-POE Chassis is shipped with safety covers over each of the seven front-panel 48 Vdc, 25 A Maximum Outputs (Ports 1 through 7). Do not remove a safety cover unless you plan to connect a DFE-POE-CBL-2M Cable. Ports without a cable connected must have the safety cover installed to protect against an energy hazard.

Warning: The rated output of these ports is 48 Vdc, 25A. This is an energy hazard and care should be taken not to bridge the contacts of this connector. The safety cover must remain in place until the N-POE Cable is installed and connected to its corresponding module.

Advertencia: La salida de estos puertos es 48 Vdc, 25A. Esto es un riesgo electrico y debe tenerse cuidado para no puentear los contactos de este conector. La tapa de seguridad debe permanecer en su lugar hasta que el cable DFE-POE-CBL-2M sea instalado y conectado a su modulo correspondiente.

Warnhinweis: Es liegen 48 V/ 25A Gleichspannung/-strom an diesen Ports an, dies liegt im elektirschen Gefahrenbereich. Es muß dafür Sorge getragen werden, dass die Kontakte des Steckers nicht überbrückt werden können. Die Schutzhüllen müssen aufgesteckt bleiben, bis das DFE-POE-CBL-2M Kabel an das installierte Modul angeschlossen ist.

When you receive your N-POE Chassis, the chassis bay covers are in place over both power-supply bays. The bay covers have two purposes. They provide an intake air ventilation path, prevent EMI leakage, and provide access to the two PSM slots in each chassis bay. The left bay has power-supply slots 1 and 2; the right bay, slots 3 and 4.

As shown in Table 2-3, when two to four PSMs are installed, the power supplies share the load equally and provide power redundancy. If one power supply fails or is removed (hot swapped) for any reason, the other power supplies take up the load. Power redundancy remains in effect as long as the load does not exceed the power as stated in the Redundancy column.

Table 2-3 Power Distribution According to Number of Installed Power Supplies

Power Supplies	Redundancy	Hot Swappable	Power Sharing
1	No	No	Maximum power 1200
2	Yes, if power demand is less than 1200 Watts.[1]	Yes	The total load is shared by both power supplies.
3	Yes, if power demand is less than 2400 Watts.[1]	Yes	The total load is shared by the three power supplies.
4	Yes, if power demand is less than 3600 Watts.[1]	Yes	The total load is shared by the four power supplies.

1. If power requirements exceed this Wattage, power redundancy is no longer supported. Removing a power supply under this condition will cause the remaining power supplies to go into over-current protection and shut down the power system.

To install the N-POE PSMs, proceed as follows:

Note: To prevent EMI leakage from the N-POE Chassis, ensure that both bay covers are installed during operation.

1. Place the N-POE Chassis on a flat sturdy surface.
2. Refer to Figure 2-1. Unscrew the two captive Phillips-head cover screws to release the bay cover from the chassis bay where you plan to install an N-POE PSM. (In this procedure, the left bay is used as an example.) Remove the bay cover and set it aside for now.

Caution: In the following step, do not force the power supply into place. You could damage the power supply and/or the chassis connector.

Precaución: En el siguiente paso, tenga cuidado de no colocar a fuerza la fuente de poder en su sitio. Si lo hace, podría dañar tanto la fuente como el conector del chasis.

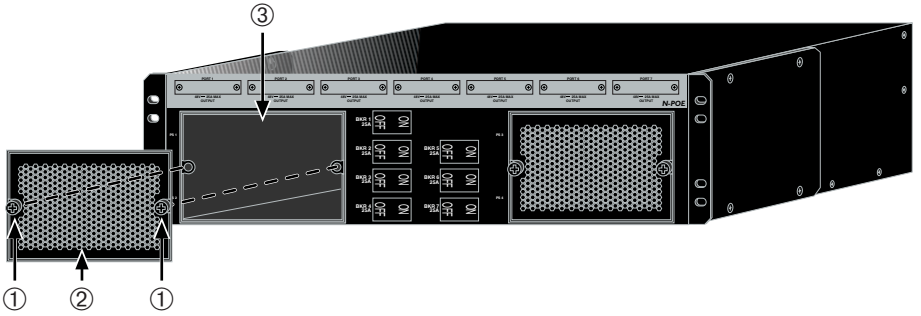
3. Refer to Figure 2-2. Align the N-POE PSM with PS1 slot inside bay 1, then slide the N-POE PSM forward until the N-POE PSM is plugged into the PS1 slot chassis connector and completely inside the bay. If significant resistance is encountered before the N-POE PSM reaches the end of its travel, remove and reinsert the power supply.
4. Fasten the N-POE PSM to the N-POE Chassis using the two captive Phillips-head screws on the N-POE PSM front panel.
5. Repeat steps 2 through 4 for each additional N-POE PSM.

Caution: Remember to replace any bay cover removed during the installation to prevent EMI leakage from the chassis.

Precaución: No olvide volver a colocar todas las tapas de los compartimentos que haya quitado durante el proceso de instalación para reducir la interferencia electromagnética del chasis.

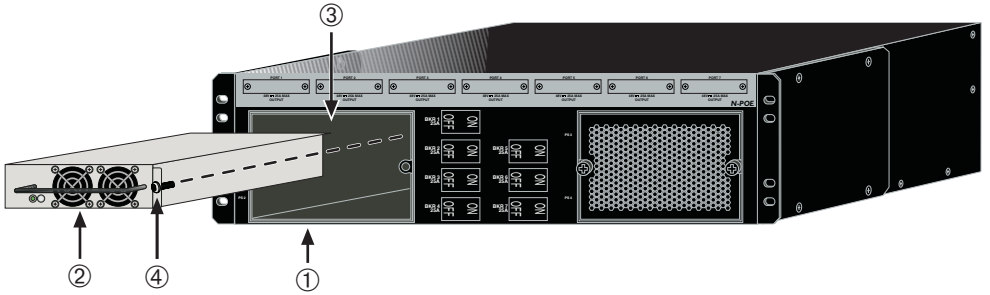
6. Proceed to "Installing N-POE Chassis into a Rack" on page 2-7 for the rack mount installation instructions.

Figure 2-1 Removing a Chassis Bay Cover



1 Captive Screw, Phillips head (2)
2 Bay Cover
3 Chassis bay (left)

Figure 2-2 Installing the N-POE PSM



1 N-POE Chassis
2 N-POE PSM
3 Power supply slot PS1
4 Captive screw, Phillips head

Replacing an N-POE PSM

To replace an N-POE PSM in an operating N-POE Chassis, proceed as follows:

Caution: Observe all Electrostatic Discharge (ESD) precautions when handling sensitive electronic equipment.

If power requirements exceed this Wattage as stated in Table 2-3 on page 2-4, power redundancy is no longer supported. Removing a power supply under this condition will cause the remaining power supplies to go into over-current protection and shut down the power system.

Precaución: Al trabajar con equipos electrónicos sensibles, tome todas las precauciones de seguridad para evitar descargas de electricidad estática.

Si los requerimientos de la fuente de poder fueran superiores a la potencia especificada en Table 2-3 on page 2-4, tenga en cuenta que el poder alternativo ya no funcionará. Si quita la fuente de poder en esas condiciones, hará que el resto de las fuentes entren en modo de protección de exceso de corriente y el sistema se apagará.

1. Unplug the AC power cord going from the AC power oulet to the N-POE Chassis AC INLET connector associated with the N-POE PSM being removed. For example, if removing the N-POE PSM in power supply slot PS1, unplug the AC INLET 1 power cord from the AC outlet.
2. At the bay opening where the PSM module slot is located, loosen the captive Phillips-head screw securing the N-POE PSM until the N-POE PSM is released from the N-POE Chassis.
3. Pull out on the N-POE PSM front-panel handle to remove the N-POE PSM from the N-POE Chassis.
4. Repeat steps 1 through 3 for each additional N-POE PSM you plan to remove.

Note: If you plan to remove and not replace an N-POE PSM immediately, reinstall the bay cover over the empty power supply slots to prevent EMI leakage from the N-POE Chassis.

To install an N-POE PSM, refer to steps 1 through 3 in "Installing N-POE PSMs" on page 2-3. Perform those steps for each N-POE PSM being replaced. When those steps are completed, proceed to "Connecting the DFE-POE-CBL-2M Cable and AC Power Cord" on page 2-9.

Installing N-POE Chassis into a Rack

To install the N-POE Chassis in a 19-inch rack, you need four user-supplied screws to fasten the N-POE Chassis to the rack rails.

After installing the N-POE PSM(s) as described back in "Installing N-POE PSMs" on page 2-3, rack mount the N-POE Chassis as follows:

1. Refer to the installation guidelines ("Guidelines for Rackmount Installation" on page 2-7).
2. Install the N-POE Chassis into the rack ("Rack Mounting the Chassis" on page 2-8).
3. Connect the DFE-POE-CBL-2M power cables ("DFE-POE-CBL-2M Cable" on page 2-9).
4. Connect the AC power cords ("AC Power Cord" on page 2-12).

Guidelines for Rackmount Installation

The installation site must be within reach of the network cabling and meet the requirements listed below:

- Ensure that the NPS is located close enough to connect 2-meter (6.6-foot) DFE-POE-CBL-2M cables from the N-POE PSMs to the N-POE switch modules.
- Ensure that you order sufficient DFE-POE-CBL-2M cables for your installation. Up to seven cables may be needed, depending on how many N-POE modules you plan to use in your system's N3 or N7 chassis.
- Need one-to-four three-pronged power receptacles capable of delivering the current and voltage specified in "N-POE-1200 W Specifications" on page A-4. Up to four AC outlets on independently-fused circuits are required and must be located within 182 centimeters (6 feet) from the site. The power cords used and type of outlet are dependent on the country. In the United States, one power cord with a NEMA 5-20P plug is provided with each N-POE PSM.
- An ambient temperature of between 5°C (41°F) and 40°C (104°F) must be maintained at the installation site with fluctuations of less than 10°C (18°F) per hour.

Caution: To ensure proper ventilation and prevent overheating, leave a minimum clearance space of 10.16 cm (4.0 in.) at the front and rear of the N-POE Chassis.

Precaución: Para asegurar una buena ventilación y evitar que el sistema se sobrecaliente, deje un espacio mínimo de 10.16 cm (4 pulgadas.) con respecto a la parte delantera y trasera del chasis N- POE.

Warning: Before installing the chassis into a rack, ensure that the rack can support the device(s) without compromising the stability of the rack. Otherwise, personal injury and/or equipment damage may result.

Advertencia: Antes de instalar el chassis en un rack, asegurarse que el rack puede soportar el(los) dispositivo(s) sin comprometer la estabilidad del mismo. De otra forma puede suceder algun tipo de daño personal o del equipo.

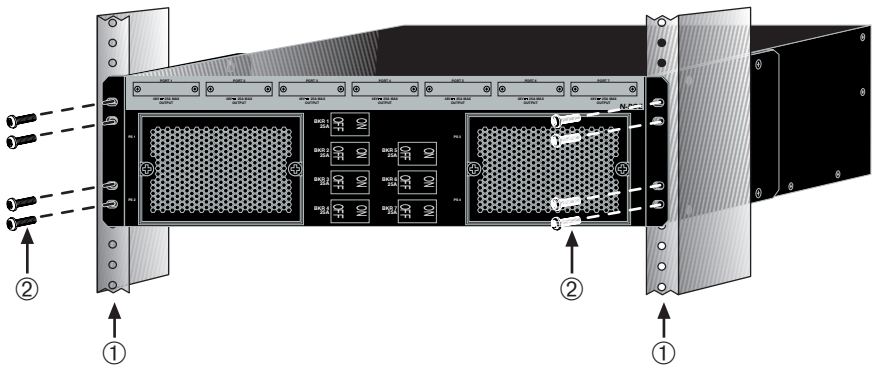
Warnhinweis: Schützen Sie sich vor Verletzungen und Geräteschaden, überzeugen Sie sich vor der Installation des Chassis in das Rack, von dessen Stabilität.

Rack Mounting the Chassis

Refer to Figure 2-3 and proceed as follows to install the N-POE Chassis into a 19-inch rack:

1. Position the chassis between the vertical frame members and align the mounting holes in the chassis brackets with those in the rack frame.
2. Fasten the chassis securely to the frame using eight mounting screws (user supplied).

Figure 2-3 Fastening the N-POE Chassis to the Rack



1 Rails of 19-inch rack

2 Mounting screws (supplied by user)

Connecting the DFE-POE-CBL-2M Cable and AC Power Cord

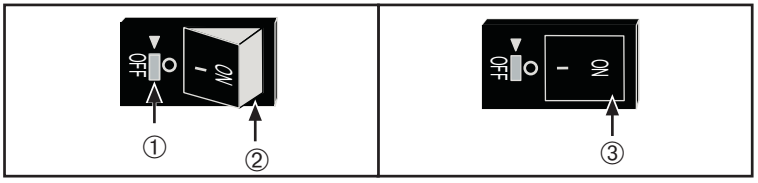
DFE-POE-CBL-2M Cable

The N-POE Chassis 48-Volt Output Ports 1 through 7 are connected to Enterasys Ethernet N-POE series switch modules using DFE-POE-CBL-2M cables. In the following procedure to connect an DFE-POE-CBL-2M cable, the appropriate circuit breaker needs to be set to OFF and reset to ON.

Circuit Breaker Operation

To set a circuit breaker to the OFF position (Figure 2-4), use a non-metallic tool to press the OFF switch. This breaks the circuit and causes the ON rocker button to pop up. To reset the circuit breaker, press on the ON rocker switch.

Figure 2-4 Circuit Breaker Operation



1 OFF switch breaks the circuit
2 Rocker switch pops up when OFF switch is pressed.
3 Rocker switch shown pressed in ON

Connecting the DFE-POE-CBL-2M Cable

To connect a DFE-POE-CBL-2M cable, refer to Figure 2-5 and proceed as follows:

Caution: Before connecting any DFE-POE-CBL-2M cables, set to the OFF position those circuit breakers associated with the 48-Volt Output Ports being connected to N-POE series switch modules. For example, you would set BKR2 to OFF if connecting a cable to Port 2.

Precaución: Antes de conectar los cables DFE- POE- CBL- 2M, coloque los interruptores de circuito asociados a los puertos de salida de 48 voltios conectados a la módulos de las series N-POE en la posición de OFF (apagado). Por ejemplo, deberá colocar en OFF el BKR2 si éste está conectado a un cable del Puerto 2.

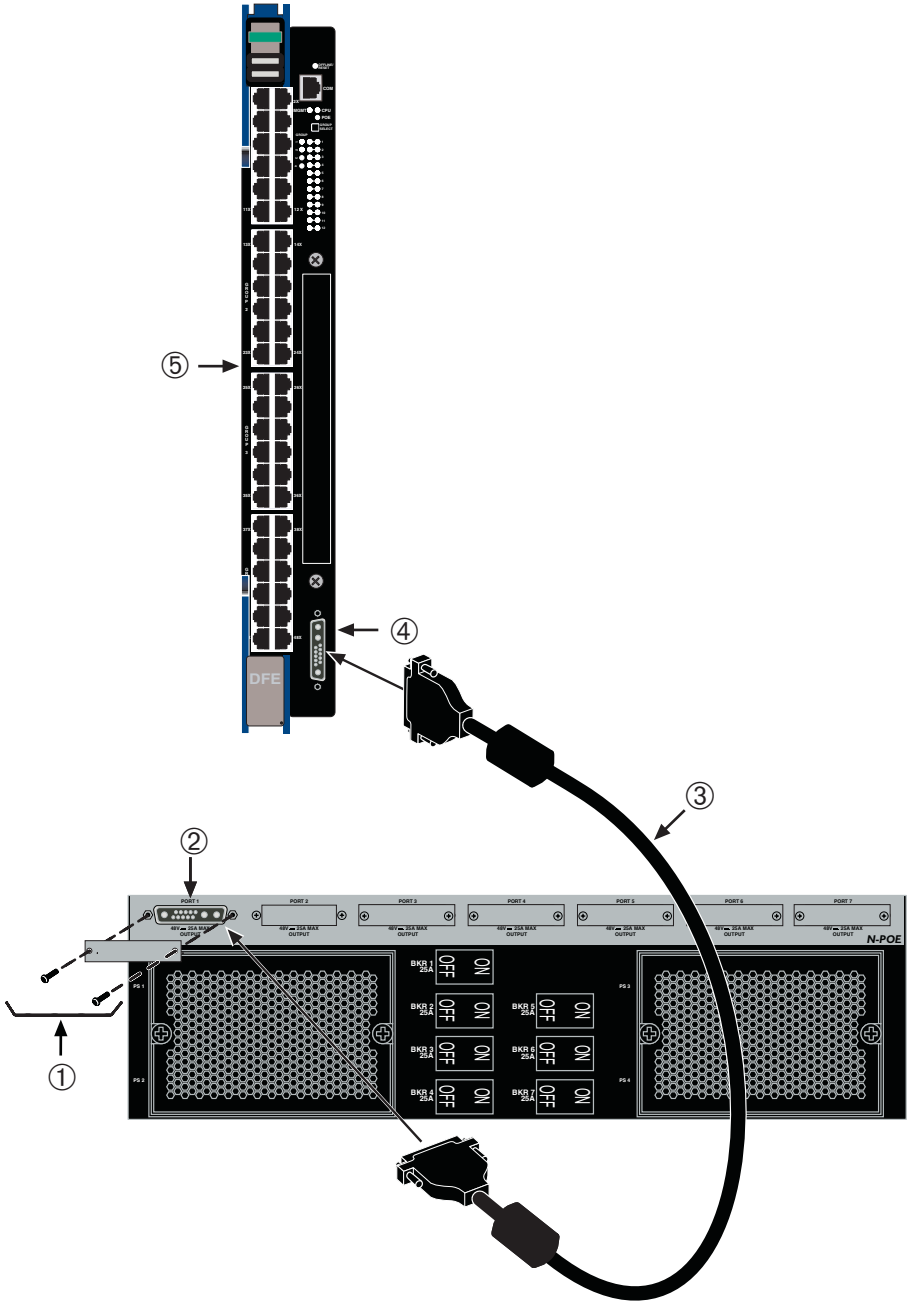
Warning: The rated output of these ports is 48 Vdc, 25A. This is an energy hazard and care should be taken not to bridge the contacts of this connector. The safety cover must remain in place until the N-POE Cable is installed and connected to its corresponding module.

Advertencia: La salida de estos puertos es 48 Vdc, 25A. Esto es un riesgo electrico y debe tenerse cuidado para no puentear los contactos de este conector. La tapa de seguridad debe permanecer en su lugar hasta que el cable DFE-POE-CBL-2M sea instalado y conectado a su modulo correspondiente.

Warnhinweis: Es liegen 48 V/ 25A Gleichspannung/-strom an diesen Ports an, dies liegt im elektirschen Gefahrenbereich. Es muß dafür Sorge getragen werden, dass die Kontakte des Steckers nicht überbrückt werden können. Die Schutzhüllen müssen aufgesteckt bleiben, bis das DFE-POE-CBL-2M Kabel an das installierte Modul angeschlossen ist.

1. Remove and save the two screws fastening the safety cover protecting the 48-Volt OPTIONAL POWER INPUT connector.
2. Connect one end of the DFE-POE-CBL-2M cable to the 48-Volt OPTIONAL POWER INPUT connector on the N-POE switch module.
3. Connect one end of the DFE-POE-CBL-2M cable to the appropriate 48-Volt Output Port connector on the front panel of the N-POE Chassis.
4. After connecting the cables to both devices, press the circuit breaker rocker button to ON.

Figure 2-5 DFE-POE-CBL-2M Cable Connections



1 Safety cover and attaching hardware
2 48-Volt output port connector
3 DFE-POE-CBL-2M cable
4 48-Volt OPTIONAL POWER INPUT
5 N-POE switch module

AC Power Cord

AC INLET 1 through AC INLET 4 at the rear of the N-POE Chassis provide power to the N-POE PSMs in slots PS1 through PS4, respectively. An AC power cord is shipped with each N-POE PSM.

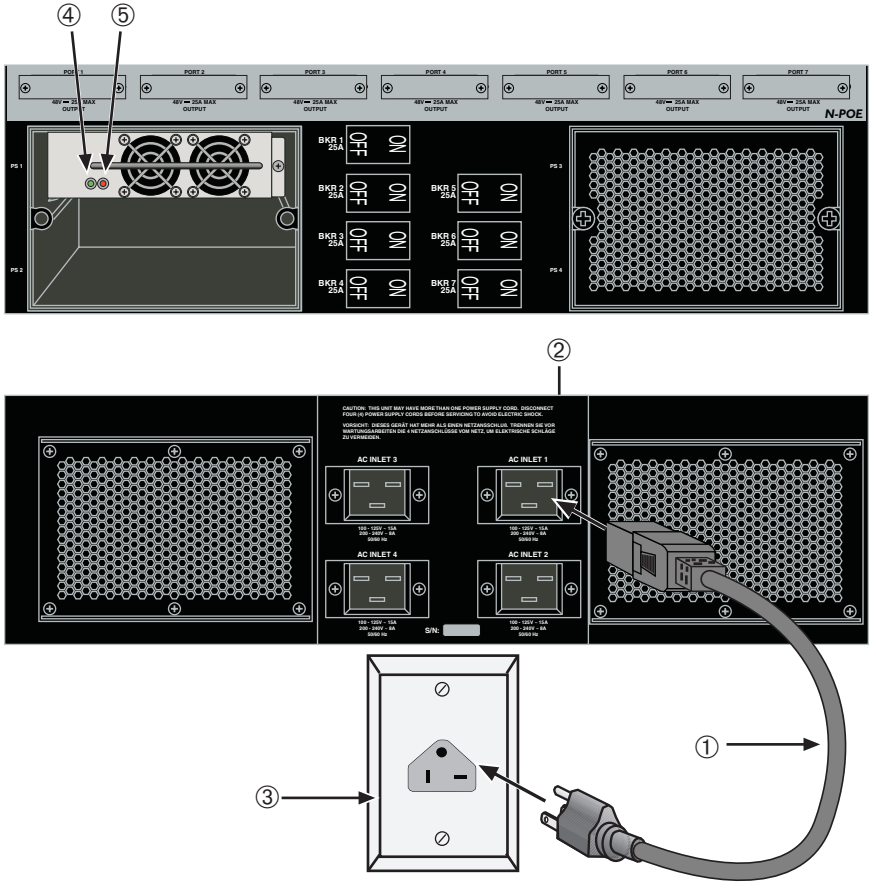
To connect the AC power cord, refer to Figure 2-6 and proceed as follows:

In Figure 2-6 the bay cover is showing the bay cover removed for clarity. It is not necessary to remove the bay cover to observe the LED indications, because they can be seen through the grill in the bay cover.

1. Plug the AC power cord into the appropriate AC INLET connector. In this example, an N-POE PSM is installed in N-POE Chassis slot PS1. Therefore, the AC INLET 1 connector is used.
2. Plug the other end of the AC power cord into a separately fused AC power outlet that meets the power specifications provided in Appendix A.
3. Check to see if the DC power LED is green and the AC power LED is green. Otherwise, refer to "Troubleshooting" on page 2-14 to determine the problem.
4. If two or more power supplies are being installed, repeat steps 1 through 3 for each N-POE PSM.

If you need additional help, contact Enterasys Networks. Refer to "Getting Help" on page 1-7 for instructions.

Figure 2-6 AC Power Connections



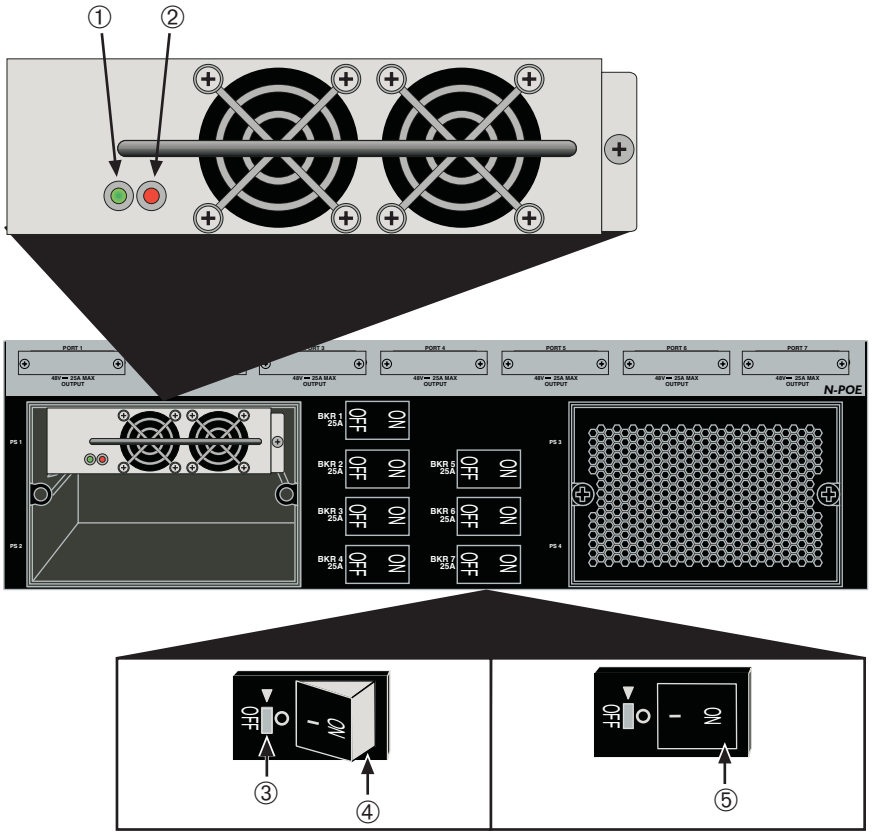
1 AC power cord
2 AC INLET 1 power connector (rear of chassis)
3 AC power source
4 DC power LED
5 AC power LED

Troubleshooting

Figure 2-7 shows the chassis front and rear panel, the location of the status LEDs, and the circuit breakers (BKR 1 through BKR 7) used to protect or manually disconnect the power to the seven 48 Vdc output Ports 1 through 7. Refer to Table 2-4 for a functional description of each LED and recommended actions to solve a problem.

Note: In Figure 2-7, the bay cover is removed for clarity.

Figure 2-7 Matrix N-POE Chassis Status LEDs and Circuit Breakers



1 DC power good LED (green)
2 AC power failure LED (red)
3 Circuit breaker OFF switch (use non-metallic tool to reach and depress switch to disconnect power from the associated 48 Vdc Output Port 1–7). The circuit breaker button pops up to OFF position.
4 Circuit breaker button in OFF position
5 Circuit breaker button in ON position (press to ON to provide power to associated 48 Vdc Output Port 1–7)

Table 2-4 N-POE PSM Status LED Indications and Recommended Actions

LED	Color	State	Recommended Action
AC power LED	Green	**Off** - AC input power to power supply is off or out of specification.	1. Check AC power cord connection to the power supply. 2. Check AC power at the power outlet. 3. Swap power cord for a known good one. 4. Remove or replace affected N-POE PSM. 5. Contact Enterasys Networks for support.
		Solid - AC input to power supply is within specification.	None
DC power LED	Green	**Solid** - 48 Vdc power supply output is within specification.	None
		OFF - 48 Vdc power supply output is out of specification.	1. Remove N-POE PSM from chassis. 2. Contact Enterasys Networks for support.

A

Specifications

This appendix provides information about the following:

Enterasys Networks reserves the right to change the specifications at any time without notice.

N-POE Chassis Specifications

Table A-1 provides the physical, power and environmental specifications for the N-POE Chassis.

Table A-1 N-POE Chassis Specifications

Item	Specification
Power Supply Slots	
PS 1 through PS 4	Slots for optional N-POE-1200 W dc power supply modules. Modules are hot swappable.
DC Outputs	
48 Vdc Port 1 through Port 7	Provides operating status and 48 Vdc to N-POE devices.
Output Voltage	48.0 Vdc
Output Current	25.0 A
Maximum Output Power	1200 W

Table A-1 N-POE Chassis Specifications (continued)

Item	Specification	
Physical		
Dimensions without mounting brackets	12.9 H x 44.6 W x 39.73 D (cm) 5.12 H x 17.56 W x 15.7 D (in.)	
Dimensions with mounting brackets	12.9 H x 48.2 W x 39.73 D (cm) 5.12 H x 18.98 W x 15.70 D (in.)	
Approximate Weight (Unit)	8.2 kg (18.0 lb)	
MTBF	1,306,387 hours	
Electrical		
AC power requirement per AC INLET connection:	Four AC inputs, one for each N-POE-1200 W installed. Each input (AC INLET 1 through INLET 4) require the following power for N-POE-1200 W power supplies installed in slots PS 1 through PS 4, respectively.	
Input Frequency: Input Voltage Range/Max. Amp.:	50/60 Hz 100 to 125 Vac/15 A per power supply	50/60 Hz 200 to 240 Vac/8 A per power supply
Environmental		
Operating Temperature	5°C to 40°C (41°F to 104°F)	
Storage Temperature	-30°C to 73°C (-22°F to 164°F)	

Port 1 through Port 7 Pinout Description

For pin location and function, refer to Figure A-1 and Table A-2, respectively.

Figure A-1 48 Vdc D-Sub Female Front-Panel Port Connector Pinouts

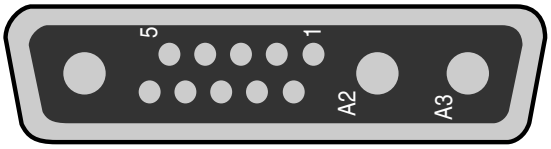


Table A-2 48 Vdc D-Sub Pinout Description

Name	Number	Function
Power	A1	None
PS 1	1	48 Vdc Output OK
PS 1	2	+ 5 Vdc
PS 2	3	48 Vdc Output OK
PS 2	4	+ 5 Vdc
PS 3	5	48 Vdc Output OK
PS 3	6	+ 5 Vdc
PS 4	7	48 Vdc Output OK
PS 4	8	+ 5 Vdc
Common	9	Standby R
Common	10	Standby R
Power	A2	+48 Vdc
Power	A3	48 Vdc return

N-POE-1200 W Specifications

The following section describes the input/output port specifications.

Table A-3 N-POE-1200 W Specifications

Item	Specification
Electrical	
The following are all connected internally to the N-POE Chassis:	
AC Input Frequency Range	47 - 63 Hz
Input Voltage Range	85 - 264 Vac
Output Voltage	48 Vdc with • overload and short circuit protection, and • over-voltage protection (OVP) to 67.2 Vdc.
Output Current	25.0 A
Maximum Output Power	1200 W
Physical	
Dimensions	4.1 H x 12.7 W x 25.4 D (cm) 1.6 H x 5.0 W x 10.0 D (in.)
Over-Temperature Protection (OTP)	Protects against • excessive temperatures caused by inadequate (blocked) airflow, • fan failure, or • excessive air inlet temperature.
Approximate Weight (Unit)	2.1 kg (4.6 lb)
MTBF	247,000 Hours

AC Power Cord

Any AC power cord used to connect an AC power source to the N-POE Chassis must meet the specifications listed in Table A-4.

Table A-4 AC Power Cord Specifications

Item	Specification
Cord set approval	The cord set must be approved for use by the governing authority in the country of installation.
Inlet Connector	IEC 320 C19 power cord connector. This is for connection to an AC Inlet connector on N-POE Chassis.
Plug Type	As required in country of installation
Wire Gauge	12 AWG with 2 mm^2 wires
Voltage Rating	250 Volts minimum
Power Cord Construction	Power cord must be constructed with molded connectors at both ends.

DFE-POE-CBL-2M Cable

This cable is a PoE-compliant ferrite shielded cable terminated with 13W3-male and female D-Sub connectors. This cable is currently available in a 2-meter length and must be ordered separately.

This cable provides the 48 Vdc operating voltages and operating status information from each 48 Vdc 25 A outputs (PS 1 through PS 7) on the N-POE Chassis front panel to the attached N-PoE switch device.

Compliance Standards

The N-POE and N-POE PSM meet the safety and electromagnetic compatibility (EMC) requirements listed in Table A-5:

Table A-5 Compliance Standards

Compliance Standards	
Safety	UL 60950, CSA C22.2 No. 60950, 73/23/EEC, EN 60950, IEC 60950
Electromagnetic Compatibility (EMC) (Applies to RPS system with five modules installed and working with five network devices.)	47 CFR Parts 2 and 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS CISPR 22, VCCI V-3